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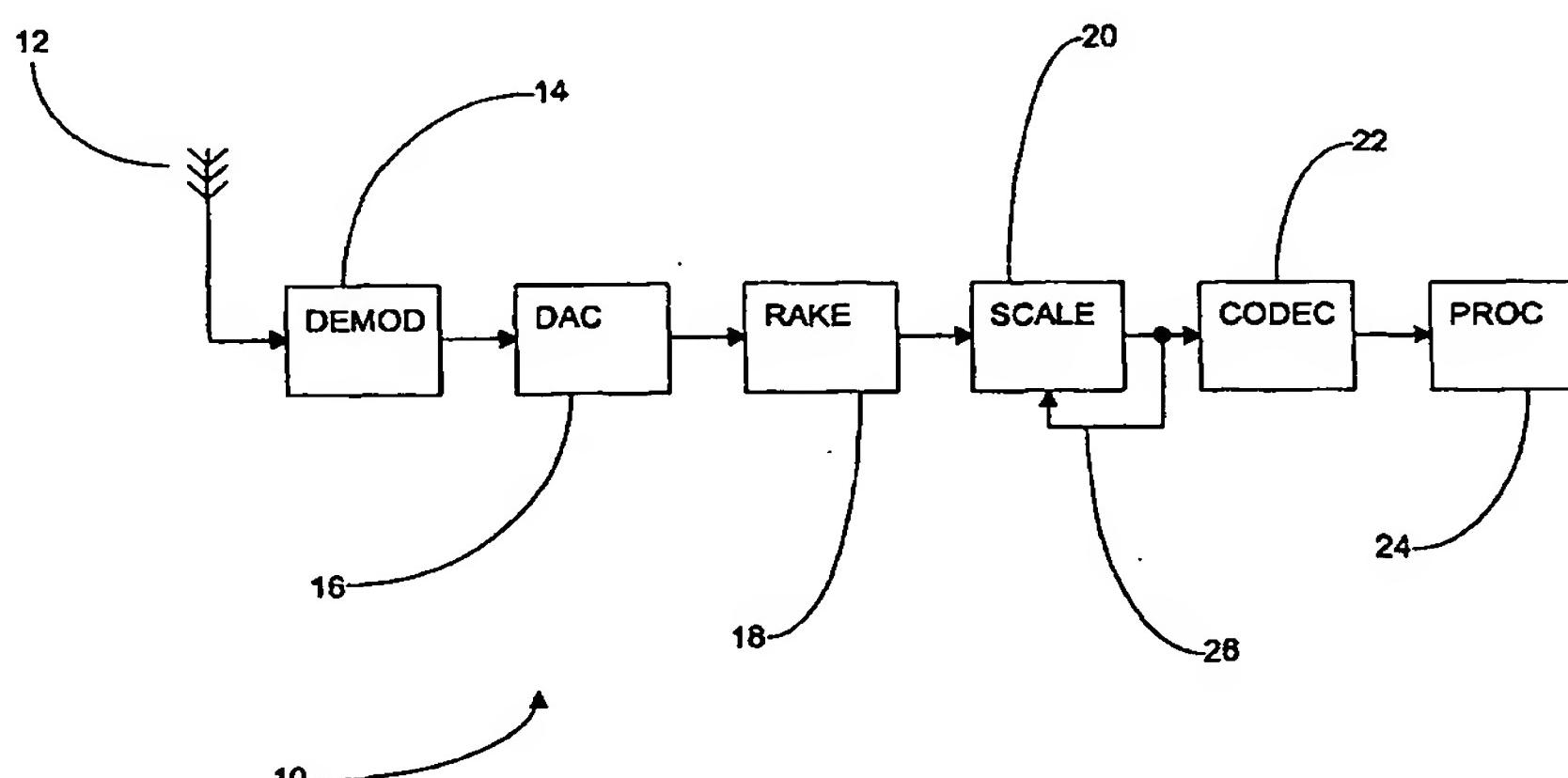
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(54) Title: STATISTICAL SCALING OF SOFT DECISIONS BEFORE DECODING



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(57) Abstract: A wireless-communications unit has a receiver chain including a codec decoding the output of a rake receiver. Soft decisions passing from the rake receiver to the codec are scaled. The scaling factor can be tuned by monitoring a function based on the cumulative probability distribution function of the scaled soft decisions.

INTERNATIONAL SEARCH REPORT

PCT/GB 03/04755

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H03M13/41 H03M13/45 H04L1/00 H04L25/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 02 47276 A (KONINKL PHILIPS ELECTRONICS NV) 13 June 2002 (2002-06-13) page 2, line 11 - line 14 page 3, line 17 - line 21 figures 3,4 ---	1,4,5, 8-11
A	US 6 347 124 B1 (ANTIA YEZDI ET AL) 12 February 2002 (2002-02-12) column 4, line 34 - line 67 figure 3 ---	1,4,5, 8-11
A	US 5 271 042 A (BORTH DAVID F ET AL) 14 December 1993 (1993-12-14) column 3, line 37 - line 40 figure 1 ---	1,4,5, 8-11
		-/-

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	LEE Y K ET AL: "Normalization, windowing and quantization of soft-decision Viterbi decoder inputs in CDMA systems" VEHICULAR TECHNOLOGY CONFERENCE, 1999 IEEE 49TH HOUSTON, TX, USA 16-20 MAY 1999, PISCATAWAY, NJ, USA, IEEE, US, 16 May 1999 (1999-05-16), pages 221-225, XP010341929 ISBN: 0-7803-5565-2 abstract ---	1,4,5, 8-11
P,X	WO 03 085917 A (KRUEGER MARTIN ;INFINEON TECHNOLOGIES AG (DE)) 16 October 2003 (2003-10-16) page 11, line 1 - line 4 ---	1,5,10, 11

INTERNATIONAL SEARCH REPORT

PCT/GB 03/04755

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
WO 0247276 -	A	13-06-2002	US CN WO EP	2002067780 A1 1404656 T 0247276 A2 1356597 A2		06-06-2002 19-03-2003 13-06-2002 29-10-2003
US 6347124	B1	12-02-2002		NONE		
US 5271042	A	14-12-1993	AU AU CA CN DE DE DK EP ES IE JP JP KR MX PT TR WO US	637166 B2 6729490 A 2066270 A1 1050958 A ,B 69029330 D1 69029330 T2 495006 T3 0495006 A1 2095261 T3 903295 A1 2591343 B2 5504872 T 9608984 B1 171792 B 95577 A ,B 26468 A 9106165 A1 5144644 A		20-05-1993 16-05-1991 14-04-1991 24-04-1991 16-01-1997 28-05-1997 23-12-1996 22-07-1992 16-02-1997 24-04-1991 19-03-1997 22-07-1993 10-07-1996 15-11-1993 31-08-1992 15-03-1995 02-05-1991 01-09-1992
WO 03085917	A	16-10-2003	DE WO	10214908 A1 03085917 A1		13-11-2003 16-10-2003